REMARKS

The Official Action of March 2, 2004 has been carefully considered. Applicant appreciates the Examiner's thorough review of the application. The changes presented herewith, taken with the following remarks, are believed sufficient to place the present application in condition for allowance. Reconsideration is respectfully requested.

By the present amendment, claims 1, 17, 22 and 26 have been amended, while claims 32-34 have been added. Support for the amendments can be found in the specification as originally filed. Accordingly, claims 1-24 and 26-34 stand pending in this application and claims 2-5, 10, 11 and 13-19 are currently withdrawn from consideration (Applicant wishes to clarify that the Examiner appears to have included claim 23 as being withdrawn in the Office Action summary, but did not so indicate in the Official Action, as such Applicant believes this was inadvertent and therefore believes claim 23 has not been withdrawn). As set forth below, it is believed that claims 1-24 and 26-34 are in condition for allowance.

In the Official Action, the Examiner rejects claim 26 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In light of the amendment to claim 26, this rejection is now moot. As such, Applicant respectfully requests reconsideration.

In the Official Action, the Examiner rejects claims 1, 6-9, 12, 21-26 and 28-30 under 35 U.S.C. §102(b) as being anticipated by Japanese patent reference JP 401193174A (hereinafter referred to as "JP '174"), a copy of JP '174 translated into English is provided for the Examiner's convenience. Applicant respectfully traverses this rejection for the reasons stated more fully below.

Claim 1 has been amended to recite a machining device for machining a surface of a workpiece including a tool and a fluid delivery system. The tool is at least partially formed

from an abrasive material having an open cell porous structure, the tool includes a rotational axis and an outer surface disposed about the rotational axis, the outer surface includes a workpiece interface adapted to interface with and machine a surface of a workpiece. The fluid delivery system delivers fluid to the workpiece interface. The fluid delivery system is stationary and operative to disperse fluid to contact the tool primarily at a location inboard from the outer surface and to deliver the fluid into the tool for transmission into and through substantially the entire open cell porous structure of the tool to the workpiece interface.

Claim 22 has also been amended such that the method steps include the steps of: providing a stationary fluid delivery system, dispersing fluid from the fluid delivery system such that the fluid is delivered into substantially the entire open cell porous structure of the tool after contacting the tool primarily at a contact location inboard from the outer surface of the tool, and rotating the tool about the rotational axis such that fluid is transmitted through substantially the entire open cell porous structure of the tool to the workpiece interface.

JP '174 apparently fails to disclose a fluid delivery system being stationary and operative to deliver fluid for transmission into and through substantially the entire open cell porous structure. The JP '174 reference also apparently fails to disclose further limitations of claim 27 that requires modifying parameters of the fluid delivery device to compensate for changes in material characteristics of the tool in order to assist in maintaining proper dispersal of fluid from the open cell porous structure of the machining zone.

Rather, the JP '174 reference discloses a polishing sandstone mounted on a grinding machine and utilized in a polishing process. JP '174 discloses the grinding machine being equipped with a structure through which a cooling fluid is supplied from a cooling fluid introduction device (page 443, lines 1-3). JP '174 teaches the cooling fluid supplied from the cooling fluid introduction device as being introduced through a cooling fluid introduction area of the polishing sandstone into the inside of the sandstone (page 443, lines 3-6). In

addition, JP '174 teaches that the cooling fluid is supplied to a polishing area where an outer peripheral area of the polishing sandstone and the grinding object come into contact (page 443, lines 10-12). More specifically, JP '174 discloses in FIG. 2, a polishing sandstone (1) coupled with a flange (3) and a nut (5) to fasten and fix the polishing sandstone (1) (page 443, lines 34-36). In addition, JP '174 teaches a mechanical seal (9) connecting a cooling fluid supply device through which a hose (8) is mounted (page 443, lines 36-37). During the polishing process, JP '174 discloses that the polishing sandstone (1) rotates around the sandstone axis (6), cooling fluid passes through the hose (8), thus through the seal (9) and finally through passages (10,11) to be introduced through the inner peripheral area inside the sandstone (page 443, lines 37-39).

The claims in the present application, however, recite a fluid delivery system being stationary and operative to disperse fluid to contact the tool primarily at a location inboard from the outer surface and to deliver the fluid into the tool for transmission into and through substantially the entire open cell porous structure of the tool to the workpiece interface. The JP '174 reference, in contrast, apparently discloses the necessity of attaching the fluid supply device (e.g., hose) to the tool by way of passing it through a seal and flange. Moreover, JP '174 disclose the use of discrete passages (e.g., FIG. 2 referenced items 10 and 11) in which the cooling fluid passes to contact the sandstone. The present inventive machining device and method do not recite such passages. Furthermore, JP '174 limits the contact of the cooling fluid with the sandstone by allowing it to only pass through discrete passages, such that substantially the entire sandstone will not have cooling fluid introduced into and through it directly by the fluid supply device. Accordingly, Applicant respectfully requests reconsideration and allowance of claims 1 and 22 and claims 2-26 and 28-33 depending directly or indirectly therefrom.

Claims 20, 27 and 31 were rejected under 35 U.S.C. § 103(a) as being unpatentable

over JP '174 in view of Wohlmuth U.S. Patent No. 4,438,598 (hereinafter referred to as "Wohlmuth"). However, Applicant submits that claims 20, 27 and 31 are nonobvious over JP '174 in combination with Wohlmuth. Accordingly, this rejection is traversed and reconsideration is respectfully requested. As discussed above claims 1 and 22 from which claims 20 and 31 depend are not anticipated by JP '174 and the teachings of Wohlmuth do not overcome those deficiencies, as such, Applicant respectfully requests reconsideration and allowance of claims 20 and 31.

With respect to claim 27, it is respectfully set forth that JP '174 alone or in combination with Wohlmuth does not teach or suggest modifying parameters of the fluid delivery device to compensate for changes in material characteristics of the tool in order to assist in maintaining proper dispersal of fluid from the open cell porous structure at the machining zone. For example, as set forth in Applicant's specification on page 11, lines 18-21, the contact location of the fluid may be adjusted to compensate for material wear of the abrasive material. However, Wohlmuth teaches adjusting the temperature of a coolant material once the temperature the tool has become too hot (col. 4, lines 2-5). Thus, the disclosures in Wohlmuth do not overcome the failings of JP '174. Particularly, the present inventive method recites maintaining proper dispersal of fluid from the open cell porous structure at the machining zone, while JP '174 alone or in combination with Wohlmuth fails to teach maintaining such a proper dispersal of the cooling fluid from the open cell porous structure. Accordingly, JP '174 alone or in combination with Wohlmuth apparently fails to provide any teaching or suggestion to modify the parameters of a fluid delivery device to compensate for changes in material characteristics of a tool in order to assist in maintaining proper dispersal of fluid from an open cell porous structure as required by claim 27. Accordingly, for these reasons, Applicant respectfully request reconsideration and allowance of independent claim 27.

It is believed that the above represents a complete response to the Examiner's claim rejections, and therefore places the present application in condition for allowance. Applicant further requests reconsideration and allowance of claims 2-5, 10, 11 and 13-19 that were previously withdrawn by the Examiner since these claims depend directly or indirectly from allowable claim 1. Reconsideration and an early allowance of claims 1-24 and 26-34 is therefore respectfully requested.

Respectfully submitted,

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